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THE curious observation is made by P. Villard in the last *Comptes Rendus*, that at the temperature of  $1000^{\circ}$  fused silica,  $\text{SiO}_2$ , is permeable to hydrogen.

THE abstract of a paper read before the Chemical Society (London) by John Wade on the constitution of hydrogen cyanid, is given in the last number of the *Proceedings*. From reactions with alkyl iodids and sulfates, it has appeared as if potassium cyanid had the constitution  $\text{KCN}$  while that of silver cyanid is  $\text{AgNC}$ . Wade now shows that when potassium cyanid is heated with alkyl potassium sulfate at a lower temperature, the isomeric isocyanid is often the principal product. He further finds that practically all the isocyanids can be converted into cyanids (nitrils) by heat. Since the formation of nitrils in the above interaction is thus accounted for, one of the chief arguments for the nitrilic constitution,  $\text{HCN}$ , of hydrogen cyanid disappears, and it seems possible that  $\text{HNC}$  represents the constitution of the acid, and that all the cyanids have an analogous constitution.

J. L. H.

#### MEDICAL EXHIBITS AT PARIS.

THE Paris correspondent of the *British Medical Journal* gives the following account of some of the medical exhibits at the Paris Exposition:

In the Pavillon des Armées de Terre et de Mer, at the end nearest the Pont de l'Alma, we first enter the Salon Pasteur. On either side of the entrance are cabinets filled with cultures of different microbes. In the center of the room is the bust of Pasteur on a pedestal, round the base of which is an octagonal case containing a retrospective exhibition of the work of Pasteur. Here we see the manuscript of the thesis presented before the Faculty of Science in 1847 on molecular dissymmetry; the microscope used by Pasteur to measure the angles of crystals, and models of various crystals; his work on fermentation, with the original apparatus used for the study of butyric acid fermentation, and the apparatus for the study of living anaërobic microbes. Pasteur's researches on spontaneous generation are illustrated by the apparatus to prove that calcined air contained no germs, and the flasks used in

the experiments on the organized dusts in the atmosphere, and opened by him on October 3, 1860, at the summit of Mount Poupet. In connection with his investigation into the diseases of wines and beer, flasks for the pure culture of yeast and experiments on the aging of wines are shown. The microscope used by Pasteur in his investigation of the diseases of silkworms is shown, together with baskets for rearing silkworms, chains of cocoons, and pigeon-holes for rearing isolated worms. Methods of sterilization are illustrated by the first model of the Chamberland autoclave used in Pasteur's laboratory, and by Chamberland filters. Virulent diseases are illustrated by the flask of putrified blood from which Pasteur obtained the anaërobic microbe which he called the 'vibrion septique.' U-shaped tubes from Pasteur's laboratory containing anthrax blood, with samples of the first and second vaccines against anthrax as supplied to veterinary surgeons are exhibited. Down to January 1, 1900, in France alone, 4,971,494 sheep and 708,980 cattle have been inoculated. Some manuscript notes by Pasteur on the experiments in his laboratory in 1881 on hydrophobia are shown, as are also his platinum spatula instruments for trephining rabbits and to remove the spinal cord, dried cords, etc.

On the right-hand of the Salon Pasteur is a model of the Pasteur Institute, with the recently completed Annexe of Biological Chemistry and hospital for hydrophobia and diphtheria patients. An adjacent glass case contains a bouillon culture of the bacillus of diphtheria in a large flat-bottomed flask, the trocar of Roux and Nocard with rubber tube to collect the blood from the immune horse, the jar in which the clot and serum separate; a small filter by L. Martin for experiments on the toxin, the large filter used to filter the cultures of diphtheria to prepare the toxin, the filtered culture, and bottles of the serum in liquid and dried form.

On the left-hand side is the exhibit of the Pasteur Institute at Lille, showing cultures of the plague bacillus of Yersin-Kitasato and the antip plague serum; venomous snakes, with Calmette's serum against snake bite; the sterilization of water by ozone, with numerous maps, plans and photographs of the Lille Institute.

In small rooms leading out of the Salon Pasteur is a portion of the hygiene exhibit of foreign nations, the major portion being in the Champ de Mars. Germany here shows a large model of the Imperial buildings for sanitary administration, a map of the mineral waters of Germany, numerous plans and elevations of the many sanatoria for the open-air treatment of consumption; also numerous graphic models to show the increase in the population, the fall in death-rates, the hospital accommodation, etc., the most striking being black and red cubes showing the number of deaths from small-pox in 1862-76, that is, 199,410, compared with the number of deaths in 1882-96, that is, 3291; in 1897 there were only five deaths from small-pox. Vaccination and re-vaccination became compulsory by law in 1775.

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*SIGMA XI, THE AMERICAN ASSOCIATION AND THE GEOLOGICAL SOCIETY OF AMERICA.\**

AN unsigned article in *SCIENCE* (June 22d) entitled 'Sigma Xi at the American Association for the Advancement of Science,' calls attention approvingly to a movement to associate meetings of this Greek-letter society with those of Association. The rapid rise of the Sigma Xi in American universities is cited, and it is affirmed that "as an honor society it promises to take a leading part in our universities in which science holds a prominent place." It is urged that "it has become a representative honor society for the ablest students of science in the institutions where it is established." Respecting its intent, the following authoritative quotation is made: "In establishing a new chapter \* \* \* in each case we should make sure that we entrust the power of distributing the honor of membership only to such persons and institutions as are capable of giving the education and training necessary to the carrying on of scientific investigation."

It is scarcely necessary to make these quotations to show that the fundamental feature of the Society is the promotion of a class distinction based on academic preparation. However laudable this may be in itself considered,

\* Editorial article from the *American Journal of Geology*.

it would seem to be inharmonious with the fundamental purpose of the Association, which is the development and dissemination of science among all people without regard to race, age, sex or previous conditions of intellectual servitude.

From professional relations the writer should not be inappreciative of the value of university training and of academic achievement. Nevertheless, it seems to him that the purposes of the Association are unqualifiedly democratic and that the spirit of science is equally so, and that therefore the only distinctions which the Association should foster or sanction, if it fosters or sanctions distinctions at all, are those which are based solely upon scientific productiveness. And this productiveness should be honored quite irrespective of its connection with the fortunate conditions of academic appointments and opportunities, or with the adverse or even hostile conditions under which much good science has been developed. The movement therefore to connect the Sigma Xi with those of the American Association seems incongruous.

As set forth in another article in the same number of *SCIENCE*, some fifteen special scientific societies have already become correlated with the Association and have much increased the complexity of the proceedings. This movement seems to be an inevitable consequence of the differentiation of scientific work, and is scarcely less than necessary to the continued success of the Association, but it has already brought some inevitable conflict of interests and not a little congestion of programs and appointments. Between these and the increased number of social functions, it has already come to pass that there is little time left for that personal conference and that informal sociability whose basis is 'shop talk,' which formed so large a factor in the attractiveness of the earlier meetings of the Association. If now in addition to these laudable complications, the attention of a considerable number of the members of the Association is to be diverted in the interest of an academic honor society and a precedent established for the meeting of other societies whose basis is not strictly congenial to that of the Association,